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A SMART SECURITY SYSTEM USING RF TRANSMITTER AND RECEIVER

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ABSTRACT

This paper based on the working principle of laser light security system i.e. how the laser works and what is the advantages of this system in present as well as in future. It consists of very less components specially it can detect the moving object whenever it passes or cross the beam of laser light and it can also occupy small area as well as it covers longer distances. In this research, the LDR used as a sensor. There are various types of security system has made and invented around the world in which is one of the most important in our day-to-day life because of the increasing crime gang. Moreover, it used for the water leakage over in cities. So based on these problems we had research how to secure the things and can affordable by anyone that is called low-cost laser light security system. Laser light security system is a system of security or simply small alert in home as well as in office and it will also help to know that someone is entered in particular areas as well as for the leakages of water.

Keywords: LDR,security,areas

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I . INTRODUCTION

Need of security is the basic necessity of any individual. The feeling that we are safe and everything around us is all right is imperative for a peaceful living. But in this unsafe world, when crime, terror and threats are on their peak, how can one attain that sense of security? Here, laser security system provides us with a solution and for this reason more and more people are installing them in order to stay safe and secure. Various electronic security systems can be used at home and other important working places for security and safety purposes. Laser Security alarm is a device used for security purposes.

It has a wide application in fields of security and defence starting from the security of simple house hold material to a very high valued material of an organization. They once used to be expensive solutions for security needs. Owing to cost cutting and fast technological advancements, this form of security system is becoming more affordable. Lasers differ from other light sources in a few significant ways. There are two features that are important for security systems. Unlike a light bulb or flashlight, laser light doesn't spread out, it is a narrow beam. And laser light is essentially a single colour.

Because laser light doesn't spread much, it can be sent it a long way and still have enough energy in a small area to trigger the security system detector. Because it's a single wavelength, it can put a blocking filter on the detector to let laser light through without letting background light onto the detector. Laser light travels in a straight line. For instance, to protect the front of the yard, putting the laser at one comer and the detector at the other corner would do the job.

That's not a very practical configuration, though. More typically, if it is needed to protect the perimeter of a room, or at least the

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enhances. So, laser security systems start with a laser pointing to a small mirror. The first mirror is angled to direct the beam to a second small mirror, and so on until the final mirror directs the beam to the detector.

Because it's a single wavelength, it can put a blocking filter on the detector to let laser light through without letting background light onto the detector. Laser light travels in a straight line. For instance, to protect the front of the yard, putting the laser at one comer and the detector at the other corner would do the job.

Figure 1: IR sensor in home security system

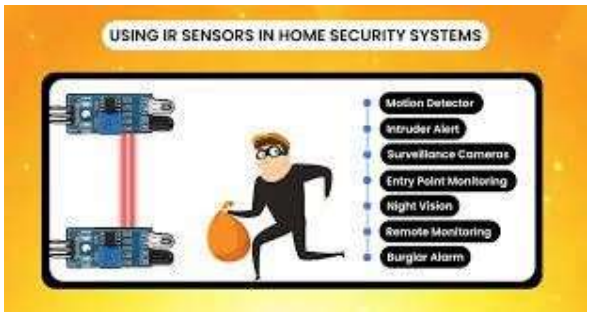

Figure 2:IR Sensor

laser light doesn't spread much, it can be sent it a long way and still have enough energy in a small area to trigger the security system detector. Because it's a single wavelength, it can put a blocking filter on the detector to let laser light through without letting background light onto the detector. Laser light travels in a straight line. For instance, to protect the front of the yard, putting the laser at one comer and the detector at the other corner would do the job.

II LITERATURE SURVEY

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[3] -They once used to be expensive solutions for security needs. Owing to cost cutting and fast technological advancements, this form of security system is becoming more affordable. Lasers differ from other light sources in a few significant ways. There are two features that are important for security systems.

[4] When the laser beam is interrupted and cannot reach the detector, its voltage output changes, and the circuit sense the change and put out a warning signal. It has a wide application in fields of security and defence starting from the security of simple house hold material to a very high valued material of an organization.

STAGES OF SECURITY ANALYSIS

Photo resistors work based off of the principle of photoconductivity is an optical phenomenon in which the material's conductivity is increased when light is absorbed by the material. When light falls i.e. when the photons fall on the device, the electrons in the valence band of the semiconductor material are excited to the conduction band. These photons in the incident light should have energy greater than the band gap of the semiconductor material to make the electrons jump from the valence band to the conduction band. Hence when light having enough energy strikes on the

device, more and more electrons are excited to the conduction band which results in a large number of charge carriers.

based on these problems we had research how to secure the things and can affordable by anyone that is called low-cost laser light security system. Laser light security system is a system of security or simply small alert in home as well as in office and it will also help to know that someone is entered in particular areas as well as for the leakages of water. When the laser beam is interrupted and cannot reach the detector, its voltage output changes, and the circuit sense the change and put out a warning signal.

Figure 3: A smart security system connected in all phases

III SYSTEM ARCHITECTURE

Various electronic security systems can be used at home and other important working places for security and safety purposes. Laser Security alarm is a device used for security

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Lasers differ from other light sources in a few significant ways. There are two features that are important for security systems. Unlike a light bulb or flashlight, laser light doesn't spread out, it is a narrow beam. And laser light is essentially a single color. Lasers differ from other light sources in a few significant ways. There are two features that are important for security systems. Unlike a light bulb or flashlight, laser light doesn't spread out, it is a narrow beam. And laser light is essentially a single color.

classified Fig4 shows the general block diagram of classification

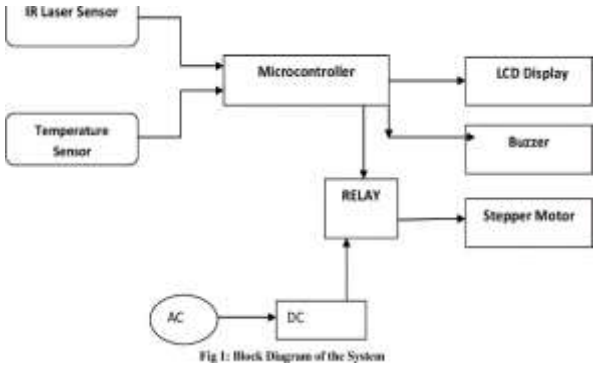

Fig 1: Block Diagram of the System

Figure 4: Block diagram for classification

IV PROPOSED SYSTEM

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V RESULTS AND DISCUSSION

Lasers are strong in beam width and can be focused on the perfect target. By using laser security system one can be safe in the case of harmful effects to the body.

As the beam width used in the laser security systems are not strong beam widths. The circuit, construction and setup for the Laser Security System are very simple. If used with a battery, the laser security system can work even when there is a power outage.

VI CONCLUSION

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Laser security system provides us the security against any crime, theft in our dayto- day life and so people are installing them in order to stay safe, secure and sound. Various electronic security systems can be used at home and other important working places for

security and safety purposes. It is a great opportunity and source of saving man power contributing no wastage of electricity. The "Laser Security System" is an important helping system. Using this system robbery, thefts & crime can be avoided to large extend. Avoiding thieves results in the safety of our financial assets and thereby this system provides us protection against all. The Laser & LDR system is highly sensitive with a great range of working. The system senses the light emitted by the Laser falling over the LDR connected with the circuit. Whenever the beam of light is interrupted by any means, it triggers the alarm or siren.

VII REFERENCES

[1] Madupu, Pranav Kumar, and B. Karthikeyan. "Automatic Service Request System for Security in Smart Home Using IoT." 2018 Second International Conference on Electronics, Communication and Aerospace Technology (ICECA). IEEE, 2018.

[2] Vaidya, Vishakha D., and PinkiVishwakarma. "A Comparative Analysis on Smart Home System to Control, Monitor and Secure Home, based on technologies like GSM, IOT, Bluetooth and PIC Microcontroller with ZigBee Modulation." 2018 International Conference on Smart City and Emerging Technology (ICSCET). IEEE, 2018. O. M. A. Hazaimeh, K. M. O. Nahar,

[3] C.Nagarajan and M.Madheswaran - 'Stability Analysis of Series Parallel Resonant Converter with Fuzzy Logic Controller Using State Space Techniques'- Taylor & Francis, .Electric PowerComponents and Systems, Vol.39 (8), pp.780-793, May 2011

[4] Brundha, S. M., P. Lakshmi, and S. Santhanalakshmi. "Home automation in client-server approach with user notification along with efficient security alerting system." 2017 International Conference On Smart Technologies For Smart Nation (SmartTechCon). IEEE, 2017.

[5] Ravi Kodali, Ravi Kishore, et al. "IoT based smart security and home automation system." 2016 international conference on computing, communication and automation (ICCCA). IEEE, 2016.

[6] C.Nagarajan and M.Madheswaran - 'Performance Analysis of LCL-T Resonant Converter with Fuzzy/PID Using State Space Analysis'- Springer, Electrical Engineering, Vol.93 (3), pp.167-178, September 2011.

[7] Shradha Somani,, et al. "IoT Based Smart Security and Home Automation." 2018 Fourth International Conference on Computing Communication Control and Automation (ICCUBEA). IEEE, 2018.

[8] Zanella, Andrea, et al. "Internet of things for smart cities." IEEE Internet of Things

journal 1.1 (2014): 22- 32.

[9] Pavithra, D., and RanjithBalakrishnan. "IoT based monitoring and control system for home automation." 2015 global conference on communication technologies (GCCT). IEEE, 2015.

[10] 3. C.Nagarajan and M.Madheswaran - 'Experimental Study and steady state stability analysis of CLL-T Series Parallel Resonant Converter with Fuzzy controller using State Space Analysis'- Iranian Journal of Electrical and Electronic Engineering.